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PERCEPTION OF ABC (ASYMMETRY, BORDERS AND COLOR) PARAMETERS IN THE SCREENING FOR MELANOMA. MODEL EXERCISE WITH EXPERIENCED DERMATOLOGISTS

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To the Editor - The ABCD rule (A for asymmetric shape, B for irregular borders, C for variation in color and D for diameter greater than 6 mm) has been proposed as a reliable and affordable screening method in melanoma campaigns.[1,2] However, little is known about the ability of examiners to agree on ABC parameters when faced with pigmentary lesions.[3]

We designed a study to separately analyze judgments on ABC features, avoiding, as far as possible, the influence of the potentially confounding effect of the observer's overall diagnostic impression.

Twelve photographs of melanocytic nevi and eleven photographs of melanomas with Breslow thickness $\leq$ 1.5 mm, were randomly selected from our file of excised lesions. For judgment regarding symmetry and borders, the profiles of the selected lesions were traced and the resultant silhouette was filled in black. To minimize the effect of dimension on the judgment, all silhouettes were given the same area. For judgment regarding color, the borders of the original photographs were concealed and the lesions were given a regular circular border (Figure).

We organized two evaluation sessions, involving seven experienced dermatologists, three weeks apart from each other. We projected slides obtained from the test material and asked participants to independently express their judgment on symmetry, border and color in a dichotomous way (e.g., color mainly homogeneous vs. mainly non-homogenous). We also organized a third session during which the original clinical photographs were shown and participants were asked to classify lesions as melanocytic nevi or melanoma. Cohen's kappa and Fleiss' kappa[4] were used to assess intra-observer and inter-observer agreement with multiple raters, respectively. The relation between the scores on ABC parameters and the final diagnosis reached by dermatologists (i.e., nevus vs melanoma) was examined by

logistic regression analysis, and expressed as Odds Ratios (OR) with their 95% Confidence Intervals (CI).

Variations were observed for intra-observer agreement on ABC parameters. The judgments on borders had the highest values of agreement, with Cohen kappa ranging from 0.64 up to 1.00. Less satisfactory was intra-observer agreement for judgment on symmetry and color, Cohen kappa ranging from 0.38 up to 0.81 for symmetry, and from 0.26 up to 0.72 for color. The Table presents data on inter-observer agreement. The agreement was moderate to substantial for judgment on borders and for the final diagnosis made by the dermatologists. Based on logistic regression analysis, a diagnosis of melanoma was significantly associated with judgment of irregular borders (OR 2.4, 95% CI 1.1 - 5.4) and haphazard color (OR 2.6, 95% CI 1.4 - 4.8), but not with judgment of asymmetric lesion (OR 1.3, 95% CI 0.6 - 2.9).

Our data point to the existence of variability in the interpretation of ABC parameters. We documented high inter-observer agreement on the final diagnosis in the face of unsatisfactory intra- and inter-observer agreement on specific features. Even if not a direct proof of the cognitive mechanism involved, our data support the concept of an automatic pattern recognition modality in the diagnosis of pigmentary lesions.[5] They also point to the need for a more standardised terminology to describe the clinical features of pigmented lesions.[6]

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89 **Table** - Inter-observer agreement on ABC parameters and clinical diagnoses

90

Session	Kappa values			
	Symmetry	**Borders**	**Color**	**Clinical diagnosis***
1st	0.21	0.52	0.36	0.63
2nd	0.32	0.62	0.32	

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93 * This was assessed in a third final exercise
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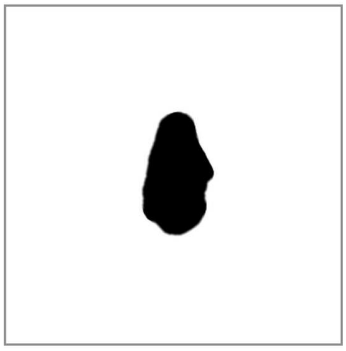
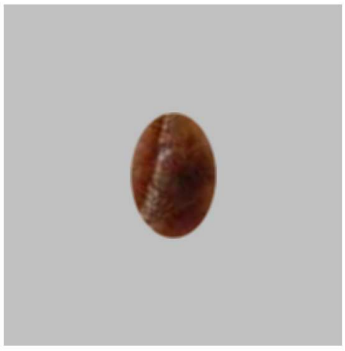
Figure Legend- Example of test materials prepared for the ABC perception exercise: symmetry and borders were evaluated on a segmented version of the lesion filled in black with a white background (a); judgment on color was performed on a regular ovoid shape version of the original segmented lesion (b); original clinical photographs were used for the final classification of lesions as melanocytic nevi or melanoma (c).

a)



b)



c)